

REMARKS

Claims 1 – 5, 7 – 14 and 21 – 25 remain in the application and stand finally rejected. Claims 1, 8 and 21 are amended herein. Claims 6 and 15 – 20 are previously canceled. No new matter is added by this amendment.

Claims 1 – 5, 7 and 21 – 25 are finally rejected under 35 U.S.C. §102(e) over published U.S. application No. 2005/0103636 to Cheng et al. Claims 1, 2, 5, 7, 21, 22 and 25 are finally rejected under 35 U.S.C. §102(e) over published U.S. application No. 2005/0062170 to Biggs et al. Claims 8 – 13 are finally rejected under 35 U.S.C. §103(a) over Cheng et al. in view of U.S. Patent No. 6,706,622 to McCormick et al. Claims 8 and 11 – 13 are finally rejected under 35 U.S.C. §103(a) over Biggs et al. in view of McCormick et al. Claim 14 is finally rejected under 35 U.S.C. §103(a) over Biggs et al. in view of McCormick et al. and in further view of U.S. Patent No. 6,798,050 to Homma et al. and published U.S. application No. 2003/0034489 to Bhattacharya et al. Claims 1 – 5, 7 – 13 and 21 – 25 are finally rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,232,212 to Degani et al. in view of McCormick et al. Claim 14 is finally rejected under 35 U.S.C. §103(a) over McCormick et al. in view of Degani et al., Homma et al. and Bhattacharya et al.

Regarding the final rejection of Claims 1 – 5, 7 and 21 – 25 over Cheng et al., as noted in the final office action, the applicants can, if necessary, provide evidence to remove Cheng et al. as a reference under 35 U.S.C. §102(e). However, for the reasons set forth below, such evidence is not believed necessary. Specifically, Cheng et al. teaches “an aluminum bond pad 102 formed at an uppermost metallization level of a semiconductor substrate 104, and which serves to provide an external connection to the active devices” Paragraph 0012 second sentence. “In addition, a **passivation** layer,

such as a photosensitive polyimide (PSPI) **layer 112** is formed over the topmost pad nitride layer 110.” *Id*, last sentence (emphasis added). So, Cheng et al. teaches the passivating layer 112 over the terminal metal layer 102. Claim 1 recites “a terminal metal layer disposed on a passivating layer;” Line 2. *See also*, claim 21, line 2. Therefore, this recited structure of claims 1 and 21 is different than the passivating layer 112 on the terminal metal layer 102 of Cheng et al. Accordingly, Cheng et al. fails to teach the present invention as recited in claims 1 or 21 or, in any of dependent claims 2 – 5, 7 and 22 – 25, which depend therefrom. Reconsideration and withdrawal of the final rejection of claims 1 – 5, 7 and 21 – 25 over Cheng et al. is respectfully requested.

Furthermore, regarding the final rejection of claims 8 – 13 over Cheng et al. in view of McCormick et al., Cheng et al. is being applied under 35 U.S.C. §102(e) through 35 U.S.C. §103(a). “Subject matter developed by another person, which qualifies as prior art only under ... subsections (e), ... of section 102 ..., **shall not preclude patentability** under this section where the subject matter and the claimed invention were, ... subject to an obligation of assignment to the same person.” 35 U.S.C. §103(c)(1) (emphasis added). Cheng et al. both shares common inventors and, from its face, is assigned to the assignee of the present invention. Therefore, Cheng et al. is precluded under 35 U.S.C. §103(c)(1) from being applied as a reference against the present application under 35 U.S.C. §103(a). Reconsideration and withdrawal of the final rejection of claims 8 – 13 over Cheng et al. in view of McCormick et al. is respectfully requested.

Regarding the final rejection of Claims 1, 2, 5, 7, 21, 22 and 25 over Biggs et al., again as noted in the final office action, the applicants can, if necessary, provide evidence to remove Biggs et al. as a reference under 35 U.S.C. §102(e). However, for the reasons set forth below, such evidence is not believed necessary. Specifically, Biggs et al. teaches a “layer of SiO₂ or other dielectric material 22, ... deposited on an Si₃N₄ layer and **on the aluminum layer 18**, and another layer 24 of Si₃N₄, ... deposited on SiO₂ layer 22 [and a] layer of ... photosensitive polyimide 30, ... deposited over the layer 24 of

Si₃N₄,... .” Paragraph 0007, lines 13 – 21 (emphasis added). Furthermore, “this represents the stage of formation of a portion of the I/C chip 10 when it is ready to have the wire bond pad formed according to this invention.” *Id.*, lines 25 – 28. So, Biggs et al. also teaches the passivating layer 30 over the terminal metal layer (aluminum pad) 18. As noted above, claim 1 recites (with corresponding recitations in claim 21) “a terminal metal layer disposed on a passivating layer;” Line 2. *See also*, claim 21, line 2. Therefore, this recited structure of claims 1 and 21 is different than the passivating layer on the metal pad of Biggs et al. Accordingly, Biggs et al. fails to teach the present invention as recited in claims 1 or 21 or any of claims 2, 5, 7, 22 and 25 depending therefrom. Reconsideration and withdrawal of the final rejection of claims 1, 2, 5, 7, 21, 22 and 25 over Cheng et al. is respectfully requested.

Regarding the final rejection of claims 8 and 11 – 14 over Biggs et al. in view of McCormick et al., alone, or further in combination with Homma et al. and Bhattacharya et al.; Biggs et al. also is being applied under 35 U.S.C. §102(e) through 35 U.S.C. §103(a). However, Biggs et al. also shares common inventors and, from its face, is assigned to the assignee of the present invention. Therefore, Biggs et al. is precluded under 35 U.S.C. §103(c)(1) from being applied as a reference against the present application under 35 U.S.C. §103(a). Reconsideration and withdrawal of the final rejection of claims 8 – 13 over Biggs et al. in view of McCormick et al., alone, or further in combination with Homma et al. and Bhattacharya et al. is respectfully requested.

Regarding the final rejection of claims 1 – 5, 7 – 14 and 21 – 25 under 35 U.S.C. §103(a) over Degani et al. in view of McCormick et al., alone or further in view of Homma et al. and Bhattacharya et al.; the final Office action responds to the applicants remarks in the previous response, asserting that “[t]he claim does not require the hard test barrier to completely surround/enclose the seed pad. In fact, the instant specification show the hard test barrier does not completely enclose the seed layer pad, but instead merely covers the top and side surfaces. Therefore, it appears Applicant is also using a

broad interpretation of the term ‘enclosing’.” Neither do the claims recite partially “enclosing” as the claim is being interpreted in the final rejection. The final Office action specifically notes that McCormick et al. teaches only partially enclosing.

Accordingly, claims 1 and 8 are amended by this proposed amendment to recite that the “hard test barrier layer extends along the sides of said conducting layer pad and said conducting layer pad is completely enclosed by said diffusion barrier layer and said hard test barrier layer” at lines 5 – 8 and 8 – 11, respectively. Claim 21 is also amended for clarity and to include an analogous recitation at lines 5 – 7. This proposed amendment to claims 1, 8 and 221 is supported by the specification in general and Figures 3A – G, in particular. No new matter is added. Neither is completely enclosing the pad shown or suggested in any reference of record, nor does any combination of references of record result in completely enclosing the pad as recited in claims 1, 8 and 21, as amended by this proposed amendment. Entry of the amendment, reconsideration and withdrawal of the final rejection of claims 1, 8 and 21 over Degani et al. in view of McCormick et al. is respectfully requested.

Furthermore, since dependent claims include all of the differences with the prior art as the claims from which they depend, claims 2 – 5, 7, 9 – 13 and 22 – 25, which depend from amended claims 1, 8 and 21, are also believed to be patentable over Degani et al. in view of McCormick et al. Neither do either of Homma et al. or Bhattacharya et al. or any other reference of record, add what is missing from the combination of Degani et al. and McCormick et al. to result in the present invention as recited in claim 8, from which claim 14 depends. Therefore, the combination of Degani et al. and McCormick et al. with Homma et al. and Bhattacharya et al. does not result in, and does not make obvious, claim 14. Entry of the amendment, reconsideration and withdrawal of the final rejection of claims 2 – 5, 7, 9 – 14 and 22 – 25 over Degani et al. in view of McCormick et al. alone, or further in view of Homma et al. and Bhattacharya et al., is respectfully requested.

Amendment After Final
April 27, 2007

FIS920030352US1
Serial No.: 10/707,892

The applicants thank the Examiner for efforts, both past and present, in examining the application. Believing the application to be in condition for allowance, both for the amendment to the claims and for the reasons set forth above, the applicants respectfully request that the Examiner enter the amendment, reconsider and withdraw the final rejection of claims 1 – 5, 7 – 14, and 21 – 25 under 35 U.S.C. §§102(e) and 103(a), and allow the application to issue.

As previously noted, the applicants believe that the matter presented in the written description of the present application is quite different than, and not suggested by, any reference of record. Accordingly, should the Examiner believe anything further may be required, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below for a telephonic or personal interview to discuss any other changes.

Please charge any deficiencies in fees and credit any overpayment of fees to IBM Corporation Deposit Account No. 09-0458 and advise us accordingly.

Respectfully Submitted,

April 27, 2007
(Date)

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